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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,499	04/19/2004	Heinrich Friederich	00635.0371-US-01	3463
22865 7590 08/10/2007 ALTERA LAW GROUP, LLC 6500 CITY WEST PARKWAY SUITE 100 MINNEAPOLIS, MN 55344-7704			EXAMINER REESE, DAVID C	
			ART UNIT 3677	PAPER NUMBER
			MAIL DATE 08/10/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/827,499	<b>Applicant(s)</b> FRIEDERICH ET AL.	
	<b>Examiner</b> David C. Reese	<b>Art Unit</b> 3677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 May 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8-10 and 12-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-10, 12-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                             |                                                                                         |
|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                 | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/24/2007 has been entered. Consequently, the following is the current listing of claims in the instant application:

#### ***Status of Claims***

- Claims 1-7, and 11 were canceled.
- Claims 15-18 were added.
- Claims 12-14 were amended.
- Claims 8-10, 12-18 are pending.

#### ***Claim Objections***

[1] Claim(s) 7-8 were previously objected to because of informalities. Applicant has successfully addressed these issues in the amendment filed on 5/24/2007. Accordingly, the objection(s) to the claim(s) 7-8 have been withdrawn.

However, as amended:

[2] Claims 8 and 13 are objected to because of the following informalities: they are duplicates of one another.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

[3] The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

[4] Claims 9-10, 12, and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0989311 in view of Miki et al., US-3,992,974.

Although the invention is not identically disclosed or described as set forth 35 U.S.C. 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a designer having ordinary skill in the art to which said subject matter pertains, the invention is not patentable.

As for Claim 12, EP 0989311 discloses of a screw element having a screw axis, comprising:

a tool engagement element (page 5 on the applicant's instant amendment); and

a spring element having a free edge (7');

wherein the spring element is formed on the screw element in one piece (page 6 on the applicant's instant amendment);

wherein the spring element is coaxial with the screw axis (page 6 on the applicant's instant amendment);

wherein the free edge defines a workpiece contact plane which is perpendicular to the screw axis and is spaced axially from the screw element;

wherein the spring element is mounted at the periphery of the screw element;

wherein the spring element projects radially beyond the periphery;

wherein the spring element forms a workpiece contact, which is disposed outside the periphery of the screw element;

wherein the spring element is [adapted to prevent the pre-stressing effect for the screw connection being lost by virtue of changes in length thus ensuring sufficient frictional force to prevent the screw connection becoming unscrewed].

With regard to that in brackets [] above: Note that it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation, but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

The difference between the claim and EP 0989311 is the claim recites: wherein the spring element is of lower hardness than the screw element. A person of ordinary skill in the art, upon reading the reference, would also have recognized the desirability of improved methods of formulating the spring element. Miki et al., teaches of a conical spring washer for a bolt. Furthermore, Miki et al., teaches of altering certain characteristics of said washer (see the various tables and graphs) including that of the hardness to create an optimum relationship of force distribution with regard to the bolt and/or fastening structures. Miki et al., also discloses to one of ordinary skill in the art that "...the washer of the present invention is used in the plastic range of it, so if the hardness of the washer is too high, the washer would be in danger of hydrogen embrittlement...therefore, it is desirable that the hardness is under..." as stated in col. 7, lines 14-27. Thus, it would have been obvious to a person of ordinary skill in the art to try lowering the hardness of the spring element of EP 0989311 in an attempt to provide an improved

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formulation of the spring element and assembly, as a person with ordinary skill has good reason to pursue the known options within his or her technical grasp. In turn, because the spring element as claimed has the properties predicted by the prior art, it would have been obvious to make the spring element of EP 0989311 of a lower hardness than that of the screw element.

Re: Claim 9, EP 0989311 shows wherein the screw is of a thread-forming nature (19).

Re: Claim 10, EP 0989311 shows wherein only the spring element and it bears with a predetermined prestressing force against the adjoining workpiece.

Re: Claim 15, EP 0989311 shows wherein the spring element forms a workpiece contact which is concentric with the screw axis.

Re: Claim 16, EP 0989311 shows wherein the spring element is a ring which is concentric around the screw axis.

Re: Claim 17, EP 0989311 shows wherein the spring element has a workpiece contact which is annular throughout.

[5] Claims 8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0989311 in view of Miki et al., US-3,992,974, and in further view of Hsiao, US 6,302,629.

As for Claims 8 and 13, EP 0989311 in view of Miki et al. teach that of the above claims.

The difference between the claim and EP 0989311 in view of Miki et al. is that EP 0989311 in view of Miki et al. do not expressly state of the spring element having projections in the region of the workpiece contact. Hsiao discloses a fastener similar to that of EP 0989311 in view of Miki et al. In addition, Hsiao further teaches of projections in the region of the workpiece contact. It would have been obvious to one of ordinary skill in the art, having the disclosures of EP 0989311 in view of Miki et al. and Hsiao before him at the time the invention

was made, to modify the spring element of EP 0989311 in view of Miki et al. to include projections, as in Hsiao. One would have been motivated to make such a combination because the projections can generate counter stresses, which can absorb any ways of torque and won't loose (abstract), as taught by Hsiao.

[6] Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0989311 in view of Miki et al., US-3,992,974, and in further view of Wagner, US-4,193,434.

As for Claim 18, EP 0989311 in view of Miki et al. teach that of the above claims.

The difference between the claim and EP 0989311 in view of Miki et al. is that EP 0989311 in view of Miki et al. does not expressly state of: wherein the ring has a plurality of openings distributed uniformly over its periphery.

Wagner discloses a fastener similar to that of EP 0989311 in view of Miki et al., including that of a spring element 28 (Fig. 2 of Wagner). Wagner further teaches of additional embodiments that the structure of the spring element 28 can take, specifically including a modification of Fig. 5; showing a spring element with a plurality of openings distributed uniformly over its periphery. As stated profoundly in columns 3 and 4, beginning with line 50 in col. 3, it is stated that, "The spring constant of the flange 28 may be varied to suit the particular application...various modifications may be made to the spring-like flange 28 in order to reduce the spring constant for any given application...it should be noted that a plurality of closed apertures 48 are created in the flange is circumferentially spaced locations radially outwardly of inner peripheral surface 52, thus effectively forming a plurality of interconnected spring arm regions 50 and outer peripheral load bearing regions 54". It would have been obvious to one of ordinary skill in the art, having the disclosures of EP 0989311 in view of Miki et al. and Wagner

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before him at the time the invention was made, to modify the spring element of EP 0989311 in view of Miki et al. to incorporate various modifications to said spring element, as in Wagner.

One would have been motivated to make such a combination to help effectively eliminate the compressive load on a plastic workpiece, helping to reduce the spring load on the plastic while maximizing the total clamping load capacity of the column or load, as taught by Wagner.

[7] Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0989311 in view of Miki et al., US-3,992,974, in further view of Wagner, US-4,193,434, and in even further view of Hsiao, US 6,302,629.

As for Claim 14, EP 0989311 in view of above teaches of a screw element having a screw axis, comprising

- a tool engagement element (page 5 on the applicant's instant amendment);

- a spring element having a free edge (7');

- said spring element being extending from and being integral with the screw element to form one piece;

- and is coaxial with the screw axis and mounted on the periphery of the screw element and projects radially from said periphery;

- said free edge defining a workpiece contact plane which is substantially perpendicular to the screw axis and is spaced axially from the screw element;

- wherein the spring element contacts a workpiece in a region outside the periphery of the screw element and is generally concentric with the screw axis;

- wherein the spring element is a ring which is generally concentric around the screw axis;



wherein the spring element is [adapted to prevent the pre-stressing effect for the screw connection being lost by virtue of changes in length thus ensuring sufficient frictional force to prevent the screw connection becoming unscrewed], and

With regard to that in brackets [] above: Note that it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation, but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

The difference between the claim and EP 0989311 is the claim recites: wherein the spring element is of a lower hardness than the screw element; wherein the ring has a plurality of openings distributed uniformly over its periphery; and wherein the spring element has projections in the region of the workpiece contact.

With respect to the first issue above, a person of ordinary skill in the art, upon reading the reference, would also have recognized the desirability of improved methods of formulating the spring element. Miki et al., teaches of a conical spring washer for a bolt. Furthermore, Miki et al., teaches of altering certain characteristics of said washer (see the various tables and graphs) including that of the hardness to create an optimum relationship of force distribution with regard to the bolt and/or fastening structures. Miki et al., also inherently discloses to one of ordinary skill in the art that "...the washer of the present invention is used in the plastic range of it, so if the hardness of the washer is too high, the washer would be in danger of hydrogen embrittlement...therefore, it is desirable that the hardness is under..." as stated in col. 7, lines 14-27. Thus, it would have been obvious to a person of ordinary skill in the art to try lowering the hardness of the spring element of EP 0989311 in an attempt to provide an improved formulation of the spring element and assembly, as a person with ordinary skill has good reason

to pursue the known options within his or her technical grasp. In turn, because the spring element as claimed has the properties predicted by the prior art, it would have been obvious to make the spring element of EP 0989311 of a lower hardness than that of the screw element.

With respect to the second issue above, Wagner discloses a fastener similar to that of EP 0989311 in view of Miki et al., including that of a spring element 28 (Fig. 2 of Wagner). Wagner further teaches of additional embodiments that the structure of the spring element 28 can take, specifically including a modification of Fig. 5; showing a spring element with a plurality of openings distributed uniformly over its periphery. As stated profoundly in columns 3 and 4, beginning with line 50 in col. 3, it is stated that, "The spring constant of the flange 28 may be varied to suit the particular application...various modifications may be made to the spring-like flange 28 in order to reduce the spring constant for any given application...it should be noted that a plurality of closed apertures 48 are created in the flange is circumferentially spaced locations radially outwardly of inner peripheral surface 52, thus effectively forming a plurality of interconnected spring arm regions 50 and outer peripheral load bearing regions 54". It would have been obvious to one of ordinary skill in the art, having the disclosures of EP 0989311 in view of Miki et al. and Wagner before him at the time the invention was made, to modify the spring element of EP 0989311 in view of Miki et al. to incorporate various modifications to said spring element, as in Wagner. One would have been motivated to make such a combination to help effectively eliminate the compressive load on a plastic workpiece, helping to reduce the spring load on the plastic while maximizing the total clamping load capacity of the column or load, as taught by Wagner.

With respect to the third issue above, that is, of the spring element having projections in the region of the workpiece contact; Hsiao discloses a fastener similar to that of EP 0989311 in view of Miki et al.. In addition, Hsiao further teaches of projections in the region of the workpiece contact. It would have been obvious to one of ordinary skill in the art, having the disclosures of EP 0989311 in view of Miki et al. and Hsiao before him at the time the invention was made, to modify the spring element of EP 0989311 in view of Miki et al. to include projections, as in Hsiao. One would have been motivated to make such a combination because the projections can generate counter stresses, which can absorb any ways of torque and won't loose (abstract), as taught by Hsiao.

***Response to Arguments***

[8] Applicant's amendment and declaration filed 5/24/2007 regarding rejections under 35 U.S.C. 103 have been fully considered. However, upon art newly discovered, a new ground(s) of rejection is made in view of Miki et al., as stated above. Consequently, all arguments are considered moot to said new grounds of rejection. Please also note the additional notice of reference cited.

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***Conclusion***

**[9] THIS ACTION IS NON-FINAL**

**[10]** Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Reese whose telephone number is (571) 272-7082. The examiner can normally be reached on 7:30 am-6:00 pm Monday-Thursday.

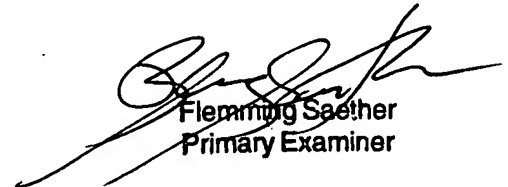
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J.J. Swann can be reached at (571) 272-7075. The fax number for the organization where this application or proceeding is assigned is the following: (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DCR



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